National Aeronautics and Space Administration

AEROSPACE Frontiers

VOLUME 13 ISSUE 10 OCTOBER 2011

Power and Measurement Inventions Merit R&D 100 Awards

NASA Glenn Takes Home Three "Oscars"

Three teams of researchers and scientists at NASA's Glenn Research Center were honored with *R&D Magazine's* "Oscar of Invention" during the annual awards banquet on Oct. 13, at Renaissance Orlando at SeaWorld in Florida. The magazine's editors, along with an independent judging panel, selected the following Glenn inventions among the top 100 technologically significant new products in 2011:

The Non-Flow-Through Proton Exchange Membrane (PEM) Fuel Cell is a more efficient way to produce electricity for long duration missions. All fuel cells combine hydrogen and oxygen to generate heat, electricity and water. While the standard fuel cell requires continuous purging of the water produced, the new invention passively wicks the water away. This avoids the need to recirculate gases and results in a system with much less weight and volume. The new fuel cells could lead to improved long-term scientific exploration, safer military operations and have significant impact on unmanned underwater and aerial vehicles. Team members include Mark Hoberecht and Ken Burke of Glenn, Ian Jakupca of QinetiQ North America, William Smith and Alfred Meyer of Infinity Fuel Cell and Hydrogen, Inc., James McElroy of McElroy PEM Technologies, LLC and Christopher Callahan of Callahan Engineering, PLLC.

Continued on page 3

Non-Flow-Through PEM Fuel Cell Team. Above, left to right: Jakupca, Burke and Hoberecht.

NASA Associate Administrator Scolese Joins Lugo for All Hands

What's the agency's plan for future exploration now that the Space Shuttle Program has come to a spectacular end—and what's in it for Glenn? Center Director Ray Lugo welcomed Associate Administrator Chris Scolese to address a capacity crowd eager to hear about this topic at the Aug. 30 All Hands meeting.

C-2010-3315 Photo by Bridget Caswell

While NASA looks to the future, Scolese reminded the audience that much is on the horizon.

"We still have a whole list of missions scheduled, some of which couldn't have happened without Glenn's contributions," Scolese said. He noted Glenn's expertise in solar array technology and RTG's (radioisotope thermoelectric generators) utilized for the Juno mission to Jupiter, the upcoming Mars Science Laboratory Curiosity rover launch and the NASA/NOAA (National Oceanic and Atmospheric Administration) satellite being readied to better predict hurricanes and tornadoes.

Following his overview, Scolese answered questions concerning perceived barriers to test flight opportunities for technology development; potential for baseline fundamental research funding; and the status of the James Webb Space Telescope.

Scolese said he will be conferring with the agency's chief technologist and chief engineer to ensure the necessary resources are reflected in the proposed fiscal year 2013 budget.

In This Issue

Straight *from the* Director

Things Continue to Progress

Center Director Lugo

I wanted to share some thoughts about changes that are going on in the agency. First, over the last few months we have had the retirements of Mike Hawes, associate administrator of Program Analysis and Evaluation, and Bryan O'Connor, chief of Safety and Mission Assurance. Most recently, Doug Cooke, associate administrator for the Exploration Systems Mission Directorate, announced his retirement. Additionally we learned that Bobby Braun, NASA's Chief Technologist, will return to his faculty position at the Georgia Institute of Technology. Obviously, things are in transition across the agency. While we will be working with different people in all of these positions, it is highly likely that we will be working with familiar people too.

Here at Glenn, we have had a few position changes as well. Harry Cikanek, deputy director of the Engineering Directorate, is leaving to pursue an opportunity at the National Oceanic and Atmospheric Administration (NOAA) and Sasi Pillay, special assistant for Information Technology, has relocated to Headquarters. I believe that both Harry and Sasi are leaving for incredible opportunities.

In addition to the personnel changes, NASA has finally taken some major steps forward in terms of exploration. First and most importantly, is the agency's selection of a new space exploration system, or the Space Launch System (SLS). I would argue that this announcement, as well as the one regarding the Multipurpose Crew Vehicle (MPCV) that preceded it, are the most significant decisions for exploration beyond low Earth orbit. While some folks are uncomfortable with our current situation regarding transportation to the International Space Station (ISS), we are now on a path to explore our solar system.

Closer to home, we have completed phase one of our technology assessment with Jefferson Consulting and Avascent groups, and we are in the early stages of phase 2 of this activity to help us make strategic decisions regarding our future. We have also made some progress on the Start, Stop, Continue study that is expected to help us make decisions on investments in facilities, tools, equipment and people.

We have had and will continue to have some challenges. We are expecting a significant cut to our Center Management and Operations (CM&O) budget. When I say significant, I do mean significant, as this is no small cut. I have banded together with the four research center directors to look at ways of improving collaboration and partnership to see if we can find innovative ways to reduce our CM&O costs. We have about 10 teams working together across a myriad of institutional services. Among the four research centers, we are hoping to find ways of extending this collaboration into other areas that will reduce cost, improve efficiency and reduce intercenter competition.

All in all, change is happening in many ways here at NASA—most of which are very positive and keep me optimistic about our future.

Centerwide Focus on Safety 2011

The 2011 NASA Glenn Safety Awareness Day on Aug. 25 stressed the theme, "Safety is Shared by All." Glenn Director of Safety and Mission Assurance (SMAD) Tom Hartline kicked off the event in the Lewis Field Hangar with welcoming remarks from Center Director Ray Lugo. Speakers included NASA Chief of Safety and Mission Assurance Bryan O'Connor and Safety Director of the Cleveland Clinic Jeff Hildreth. Jim Smith of Glenn's Safety, Health and Environmental Division highlighted details on the recent safety culture survey. At Plum Brook Station, Randy Dougle from the Ford Motor Company's Avon Lake Assembly Plant shared safety practices with employees following the live broadcast. Employees from SMAD, the NASA Safety Center and others staffed booths at Lewis Field, which featured safety-related activities and handouts. Each organization within the center facilitated safety meetings that reinforced the message throughout the week.

Live broadcast of speakers to Plum Brook. **Photo by Larry Opper**

C-2011-3173 **Photos by Bridget Caswell**

NASA Safety Reporting System booth in the Hangar.

C-2011-3164

O'Connor presents "Yes, If" safety award to Katherine McGuinnis.

2011 R&D 100 Awards Brings NASA Glenn's Total to 112

Continued from page 1

Greenberg

Fischer

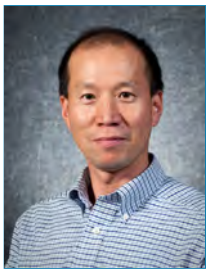
Yanis

The Multi-Parameter Aerosol Scattering Sensor (MPASS) can accurately measure, characterize and monitor atmospheric particulates. Originally developed for early-warning fire detection in spacecraft and remote habitats, this extremely compact sensor provides more accurate measurements than larger, heavier and more expensive instruments that are currently available. It can potentially be worn as a personal monitor enabling first responders, firefighters and hazardous material personnel to manage their exposure to dangerous breathing conditions. Team members include Paul Greenberg and David Fischer of Glenn, James Lock of Cleveland State University and William Yanis of the National Center for Space Exploration Research.

The Laser Pulse Stretcher allows scientists to study flames and combustion systems, using a series of mirrors to store short pulses of light while allowing a small amount to leak out in a controlled manner. This lengthens the time during which measurements can be made so that scientists can see more clearly what is occurring in various types of fire. This critical new capability will have a positive impact in building safer, cleaner and more affordable aircraft. Team members include Quang-Viet Nguyen of Glenn and Jun Kojima of the Ohio Aerospace Institute.

These recent awards bring Glenn's total to 112 R&D 100 Awards since 1963.

Nguyen



Kojima

For more information on these awards, visit http://www.rdmag.com/Awards/RD-100-Awards/2011/06/R-D-100-2011-Winners-Overview/.

—By Katherine K. Martin

Glenn Showcases IT Products

IT Transformation Continues

Glenn continues to prepare for the Information Technology Infrastructure Integration Program (I3P). On Aug. 23, the center held the Agency Consolidated End User Services (ACES) product showcase in the Briefing Center. Users reviewed the new computers, printers and cell phones that will be offered under the ACES contract and asked questions of product experts.

As a follow-up to the product showcase, the Glenn I3P Team conducted two ACES town halls. On Sept. 1 and 2, the team provided users with additional details on ACES products in the Building 3 Auditorium. The I3P mailing list, grc-i3P-questions@lists.nasa.gov, is available for users to ask further questions.

Photo by Doreen Zudell

Employees learned about the latest IT hardware and software at the End Users Services product showcase.

While ACES preparations continue, the transition of Network Services into I3P has begun. As of Oct. 1, the Glenn Network Security Perimeter, commonly called the "firewall" was successfully moved into the NASA Integrated Communications Services (NICS) contract. Glenn's remaining network and communications services are scheduled to move into NICS in January 2012.

Appointments

Meyer

Michael Meyer has been selected deputy chief of the Power and In-Space Propulsion Division. Meyer previously served as chief of the Propulsion and Propellants Branch, where he oversaw research and technology development in electric and chemical propulsion and cryogenic fluid management.

Spicer

Tom Spicer has been selected deputy chief in the Office of Human Capital Management (OHCM). Spicer has amassed a combination of supervisory and technical experience matriculating the ranks of the OHCM, including his most recent position as chief of the Human Capital Development Branch.

Mary Wadel has been selected chief of the Icing Branch in the Aeropropulsion Division. Wadel assumes her new position having most recently served as project manager for the Cryogenic Propellant Storage and Transfer (CPST) domain under the Enabling Technology Development and Demonstration Program.

Wadel

2011 Center Awards ~ Congratulations!

Glenn celebrated its annual Center Awards Ceremony on Aug. 31. Special Agent in Charge of the Cleveland Office of the FBI, Stephen D. Anthony, gave the keynote address and joined Center Director Ray Lugo in presenting awards to the center's best—"those who quietly and steadily contribute the small steps that lead to great leaps."

Steven V. Szabo Engineering Excellence Award

Orion Project Dynamic Interaction Simulation Test Team

NASA: James Davic, Dean Petters, Alban Seigneur and John Yim
ASRC Aerospace Corp.: Andrew O'Connor and Leonard Miller

C-2011-3356

Pictured, left to right: Anthony, Yim, Seigneur, Petters, Davic, O'Connor, Miller and Director Lugo

Craftsmanship Award

Assembly and Build-up Technologies

Gary Gorecki

"For providing invaluable talents for the assembly of highly sensitive cables required for space flight demonstration of high-speed data on the CoNNeCT Project."

Thomas Hudach

"For providing invaluable talents for the installation of highly sensitive cables required for space flight demonstration of high-speed data on the CoNNeCT Project."

Joseph Kerka

"For your exemplary skills, attention to detail and creativity in solving manufacturing and assembly concerns, and cooperation in working effortlessly as a member of the CoNNeCT Manufacturing, Assembly and Integration team."

Gorecki

Hudach

Kerka

Abe Silverstein Medal

Dr. Gary Hunter

"For exceptional technical achievement and outstanding leadership in performing pioneering research and commercialization of chemical gas sensor microsystems for NASA missions."

Dr. Hunter

Support Assistant/Clerical Awards

Civil Servant Support Staff

Sandra Clay, Lisa O'Connor and Cherie Westbrooks

Clay

O'Connor

Westbrooks

Contract Support Service Staff

Charlotte Kwiat, Ruth Ann Parise, Dawn Schneider, Beverly Smigel and Renee Smiley

Kwiat

Parise

Schneider

Smigel

Smiley

—DESIGN BY S. JENISE VERIS • PHOTOS BY BRIDGET CASWELL

CITATIONS ARE REPRINTED FROM THE CENTER HONOR AWARDS PROGRAM.

Technical Team of the Year

Business Development and Partnership Program Support Team

Karen Crandall, Dr. Robert Shaw, Dr. Gary Seng and Cheryl Washam

"For your efforts to procure the services of multiple small businesses and open up collaborative opportunities with other government agencies."

C-2011-3359

Pictured, left to right: Anthony, Dr. Seng, Washam, Crandall and Director Lugo. (Not pictured: Dr. Shaw)

Procurement Person of the Year

Nikki Brown

"For your work in negotiating, awarding, and administering contracts with small businesses."

Brown

Small Business Prime Contractor of the Year

Mainthia Technologies, Inc.

"For your efforts to promote small business opportunities under your contract, including participation in the Small Business Administration Mentor-Protégé program."

C-2011-3360

Pictured, left to right: Anthony, Mainthia Program Manager Todd Lockhart, President Hemant Mainthia and Director Lugo.

Schreiber

Program Person of the Year

Alphaport

Jeffrey Schreiber

"For your efforts to work with small businesses on the radioisotope power systems and also for contributions to the Small Business Innovative Research Program."

Gorecki

Large Business Prime Contractor of the Year

Universities Space Research Association

"For your efforts to promote small business opportunities under your contract, including seeking Woman-Owned, HUBZone, 8(a), Small Disadvantaged, and Service-Disabled Veteran-Owned small businesses." (Business Manager Christine Gorecki accepted.)

Diversity Leadership Award

Gary Crawford

"For your development of and continued work with the Engineers and Technicians of the Future program."

Crawford

C-2011-3361

Small Business Subcontractor of the Year

ZIN Technologies, Inc.

"For your work in mentoring other small businesses to develop their capabilities, therefore providing additional quality support to NASA."

Pictured, left to right: Anthony, ZIN President/CEO Daryl Laisure and Vice President Carlos Grodsinsky with Director Lugo.

News and Events

A Decade Later, Glenn Remembers Sept. 11 ›

Employees gathered on the morning of Sept. 9 to commemorate the 10th anniversary of the Sept. 11 attacks on the United States. Live from the Lewis Field Hangar and broadcast to Plum Brook Station, "September 11 A Decade Later: Glenn's Remembrance Program" featured Michael Heaton, award-winning *Plain Dealer* columnist and reporter (pictured). Heaton shared highlights of his amazing journey as he made his way into New York City and Ground Zero within 24 hours of the attacks. The event also featured a video compilation of employee testimonies of where they were on Sept. 11, 2001, as well as what the tragedy means to them. The video is available at http://www.youtube.com/nasaglenn.

C-2011-3561 Photo by Bridget Caswell

Glenn Gives Generously to Food Drive ˇ

NASA Glenn joined the fight against hunger by participating in the governmentwide Feds Feeds Families food drive that ended in August. The drive benefitted Harvest for Hunger and area food banks. Glenn employees dropped off nonperishable food items to locations at Lewis Field and Plum Brook Station—accumulating 2,260 pounds of food that was distributed to the Cleveland Food Bank and Victory Temple Food Kitchen in Sandusky. The Center Operations Directorate was the top donator with 490 pounds of food. The Plum Brook Management Office, Safety and Mission Assurance Directorate, Aeronautics Research Office and Office of Chief Financial Officer contributed nearly 250 pounds each.

C-2011-3422 Photo by Bridget Caswell

Pictured above: Cleveland Foodbank's Gretchen Moore, left, and Glenn's coordinator Andrea France, Office of Human Capital Management, unloads items at the food bank. Left: tables of Center Operations' donations were collected in the cafeteria at Lewis Field.

C-2011-3441 Photo by Marvin Smith

Congressman Briefed on Alternative Energy ›

During the recent congressional recess period, congressman Dennis Kucinich and staff visited Lewis Field on Aug. 29 for briefings on the center's alternative energy technology capabilities. While touring, he learned about Glenn's work in biofuels; solar and photovoltaic technology; fuel cells; advanced batteries; and flywheel technology. Kucinich is pictured in the Flywheel Test Facility.

C-2011-3297 Photo by Bridget Caswell

C-2011-3176 Photo by Michelle Murphy

‹ STS–134 Astronauts Visit

STS–134 Endeavour crew members Greg Johnson and Mike Fincke highlighted their 16-day mission to the International Space Station during an employee briefing at Glenn in July. The astronauts acknowledged Glenn contributions to astronaut health/safety and station construction. They also stopped by Glenn's onsite child development center, Lewis Little Folks (pictured); NASA's Visitor Center at the Great Lakes Science Center; and a Cleveland Indians baseball game to throw out ceremonial first pitches.

In Memory

Robert M. Brej, 69, who retired in 1999 with 37 years of federal service, died on July 15. Brej was an Air Force Veteran who began his 33-year NASA career as an apprentice in the Test Installations Division. Following graduation, Brej's work as an electronics technician focused on the development of advanced systems in spacecraft, particularly communications satellites. He worked on the Emmy Award-winning Communications Technology Satellite (1987) and NASA's Advanced Communications Technology Satellite (ACTS), which pioneered communications satellites. Brej earned numerous performance awards and a NASA Group Achievement Award for his contributions to the Systems Integration Test and Evaluation (SITE) Lab, a unique facility for testing and evaluating advanced communications network environments.

Brej

Kren

Louis J. Kren, 80, who retired in 1988 with 36 years of federal service, died on Aug. 17. Kren was an Air Force Veteran who joined the NASA workforce as an apprentice. He spent nearly his entire 32-year career in the Test Installation Division supporting a variety of projects/programs where he earned numerous Employee Suggestion Awards for innovative ideas that improved efficiency or effective operation. Prior to retiring, Kren worked at the Old Rocket Lab establishing the new Vertical Takeoff/Landing (VTOL) test rig for the Convertible Engine System Technology Program.

Harold E. Sliney, 84, who retired from NASA in 1992 with 37 years of federal service, including time in the Navy, died Aug. 22. Sliney began his 34-year NASA career as a chemical engineer in the Lubricating Branch. He pioneered the application of thermochemistry techniques to the identification, formulation and application of solid lubricant composites. His laboratory techniques were both innovative and unparalleled. He also conducted ceramics research that is at the heart of its adoption as an engineering material, today. Viewed among his peers in the tribology community as the "father of high-temperature solid lubrication," he authored or coauthored nearly 100 papers. Sliney earned two R&D 100 Awards (1974, 1986) and NASA's 1988 Government Invention of the Year based on his research in high-temperature solid film lubricants. Sliney was named a Fellow of the Society of Tribologists and Lubrication Engineers in 1978. Sliney continued his research and support to NASA as a contractor with Analex Corporation for 3 more years after retiring. Maureen Messich, Sliney's daughter, serves as executive information specialist in Glenn's Office of the Director.

Sliney

In Appreciation

My family and I thank you for the many expressions of sympathy in the recent passing of my father, Harold Sliney. Your support has been very comforting.

— Maureen Messich

FOLLOW NASA GLENN ONLINE

Article Deadlines

News items and brief announcements for publication in the November issue is noon, October 21. Larger articles require at least one month notice.

READ US ON THE INTERNET:
http://aerospacefrontiers.grc.nasa.gov

Hermes Award 2010-2011

2010 APEX AWARDS FOR PUBLICATION EXCELLENCE

Share Your News on Glenn Facebook

Would you like to see a post on the official Glenn Facebook page about your project, public event or research? It is now easier than ever to share your news on the official Glenn Facebook page. Just visit http://www.grc nasa.gov/WWW/portal/portalweb/social-contact.html and fill out the brief form. We welcome your participation in Glenn's social media efforts!

Calendar

IFPTE LOCAL 28, LESA MEETING: LESA will hold its next membership meeting on Wednesday, Nov. 9 at noon in the Employee Center's Small Dining Room.

RETIRED WOMEN'S LUNCHEON: The NASA Retired Women's Luncheon will be held at noon Thursday, Nov. 17, at Pier W., 12700 Lake Road in Cleveland. Please reserve your place by calling or emailing Gerry Ziemba, 330-273-4850 or gto64gerry@yahoo.com. All are welcome.

NATIVE AMERICAN HERITAGE MONTH: Join us for Glenn's National Native American Heritage Month Observance, to be held Wednesday, Nov. 30, from 1 to 3 p.m. in the Administration Building Auditorium. Light Refreshments will be served.

CFC UPCOMING EVENTS

Lewis Field Cafeteria, Oct. 28

CFC Basket Raffle
8 a.m. to 1:30 p.m.

Halloween Costume Contest
12 to 12:30 p.m.
Contestant Fee $5
(50/50 jackpot)

National Aeronautics and Space Administration

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AeroSpace Frontiers is an official publication of Glenn Research Center, National Aeronautics and Space Administration. It is published the second Friday of each month by the Community and Media Relations Office in the interest of the Glenn workforce, retirees, government officials, business leaders and the general public. View us online at *http://aerospacefrontiers.grc.nasa.gov*. Submit contributions via e-mail to the editor: doreen.b.zudell@nasa.gov or 216–433–5317.

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NASA Family Joins Tom Joyner Family Reunion ›

NASA's Glenn and Kennedy Space centers partnered at the Tom Joyner Morning Show Family Reunion 2011 event over Labor Day weekend to reach underrepresented students. NASA exhibits included education carts, the Journey To Tomorrow trailer and the Picture Yourself In Space photo booth. NASA also hosted several events including its Legends and Trailblazers panel, astronaut signings and a family night event with hands-on activities. Over the 4-day period, NASA employees reached out to hundreds of young people and their families with the goal of creating an unforgettable experience. Pictured is Glenn's Lance Foster and Maria Arredondo conducting a demonstration at the event.

Photo by Mack Thomas

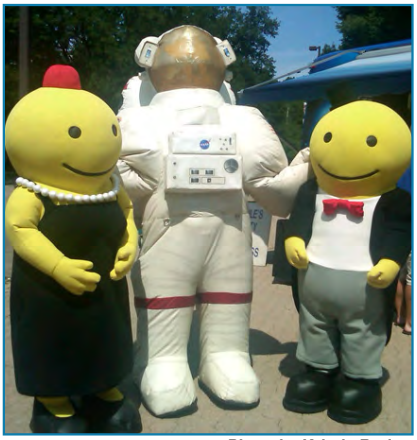

Photo by Kristin Ratino

‹ Glenn and Cleveland Public Library Celebrate

NASA Glenn and the Cleveland Public Library (CPL) celebrated their successful Summer Reading Program collaboration with a finale event at the Cleveland Metroparks Zoo on Aug. 20. Students and their families met EVA the inflatable astronaut and pictured themselves in space with the Glenn photo booth. The 8-week program included educational activities that helped students to learn about NASA and experience Science, Technology, Engineering and Mathematics (STEM)-related learning in a fun, hands-on setting. Pictured is EVA and new friends from the library enjoying the event. (Refer to the *AeroSpace Frontiers* July 2011 issue for more details on the collaboration.)

USA Today–NASA "No Boundaries" Winners Visit ›

Five Independence High School students, who earned third place honors in the nation-wide *USA Today*–NASA "No Boundaries" initiative, visited the center in July through Glenn's Educational Programs Office. For their project "Meteorologist," the team explored the career paths and responsibilities of actual meteorologists through videotaped interviews, testimonials and graphic organizers documenting research findings. "No Boundaries" helps students explore future STEM-related careers. The visit included facility tours, presentations to Glenn researchers and a conversation with visiting STS–134 astronauts. Pictured on the roof of the Communications Laboratory building, left to right: Glenn's James Nessel; winners, Brittany Hawkins, Mary Moeller, Holly Evans, Betsy Jaszczk and Janet Wong, and Glenn's Giovanna Mignosa and Jose Borges (LERCIP college intern).

Photo by Paige Ward